Claims PTO (handwritten)

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-4. (canceled)

5. (currently amended) A method of diagnosing hepatocellular carcinoma in a human patient, comprising:

(a) detecting the level of expression in a tissue sample of two or more genes from Tables 3A, 3B, 5, 7A, 7B, 8A and 8B [3-9]; wherein differential expression of the genes in Tables 3A, 3B, 5, 7A, 7B, 8A and 8B [3-9] is indicative of hepatocellular carcinoma.

6. (currently amended) A method of detecting the progression of hepatocellular carcinoma in a human patient, comprising:

(a) detecting the level of expression in a tissue sample of two or more genes from Tables 3A, 3B, 5, 7A, 7B, 8A and 8B [3-9]; wherein differential expression of the genes in Tables 3A, 3B, 5, 7A, 7B, 8A and 8B [3-9] is indicative of hepatocellular carcinoma progression.

7. (currently amended) A method of monitoring the treatment of a human patient with hepatocellular carcinoma, comprising:

(a)   administering a pharmaceutical composition to the patient;

(b)   preparing a gene expression profile from a cell or tissue sample from the patient; and

(c)   comparing the patient gene expression profile to a gene expression from a cell population comprising normal liver cells or to a gene expression profile from a cell population comprising hepatocellular carcinoma cells or to both.

8. (canceled)

9. (currently amended) A method of diagnosing a metastatic liver [tumor] cancer in a human patient, comprising:

(a) detecting the level of expression in a tissue sample of two or more genes from Tables 4A, 4B, 5, 6A, 6B, 9A and 9B [3-9]; wherein differential expression of the genes in Tables 4A, 4B, 5, 6A, 6B, 9A and 9B [3-9] is indicative of metastatic liver cancer.

10. (currently amended) A method of detecting the progression of a metastatic liver cancer in a human patient, comprising:

(a) detecting the level of expression in a tissue sample of two or more genes from Tables 4A, 4B, 5, 6A, 6B, 9A and 9B [3-9]; wherein differential expression of the genes in Tables 4A, 4B, 5, 6A, 6B, 9A and 9B [3-9] is indicative of a metastatic liver cancer progression.

11. (currently amended) A method of monitoring the treatment of a human patient with a metastatic liver cancer, comprising:

(a)   administering a pharmaceutical composition to the patient;

(b)   preparing a gene expression profile from a cell or tissue sample from the patient; and

(c)   comparing the patient gene expression profile to a gene expression from a cell population comprising normal liver cells or to a gene expression profile from a cell population comprising metastatic liver tumor cells or to both.

12. (canceled)

13. (currently amended) A method of differentiating metastatic liver cancer from hepatocellular carcinoma in a human patient, comprising:

(a) detecting the level of expression in a tissue sample of two or more genes from Tables 3-9; wherein differential expression of the genes in Tables 3-9 is indicative of metastatic liver cancer rather than hepatocellular carcinoma.

14 – 46. (canceled)

47. (currently amended) A method of claim [1] 5 or 9, wherein the level of expression of 5 or more genes from [Tables 3-9] one or more tables selected from the group consisting of Tables 3A, 3B, 4A, 4B, 5, 6A, 6B, 7A, 7B, 8A, 8B, 9A and 9B is detected.

48. (currently amended) A method of claim [1] 5 or 9, wherein the level of expression of 10 or more genes from [Tables 3-9] one or more tables selected from the group consisting of Tables 3A, 3B, 4A, 4B, 5, 6A, 6B, 7A, 7B, 8A, 8B, 9A and 9B is detected.

49. (currently amended) A method of claim [1] 5 or 9, wherein the level of expression of 100 or more genes from [Tables 3-9] one or more tables selected from the group consisting of Tables 3A, 3B, 4A, 4B, 5, 6A, 6B, 7A, 7B, 8A, 8B, 9A and 9B is detected.

50. (currently amended) A method of claim [1] 5 or 9, wherein the level of expression is compared to the gene information in [Tables 3-9] one or more tables selected from the group consisting of Tables 3A, 3B, 4A, 4B, 5, 6A, 6B, 7A, 7B, 8A, 8B, 9A and 9B.

51. (currently amended) A method of diagnosing [liver cancer] hepatocellular carcinoma or metastatic liver cancer in a human patient comprising:

(a)   preparing a gene expression profile from a tissue sample; and

(b)   comparing the gene expression profile to a database comprising part of the data in Tables 3-9.

52. (previously presented) A method of claim 51, wherein the cancer is hepatocellular carcinoma.

53. (currently amended) A method of claim 51, wherein the cancer is metastatic [lung] liver cancer.

54. (canceled)

15
55. (previously presented) A method of claim 51, wherein the database comprises all of the data from Tables 3-9.

56. (canceled)

16 57. (previously presented) A method of claim 51, wherein the database comprises gene expression information for all of the genes from Tables 3-9.

17 58. (new) A method of diagnosing hepatocellular carcinoma in a human patient, comprising:

(a) detecting the level of expression in a liver tissue sample of two or more mRNA species from Table 3A, 3B, 5, 7A, 7B, 8A or 8B; and

(b) comparing the detected level of expression to the level of expression of said two or more mRNA species in a hepatocellular carcinoma liver tissue sample, thereby diagnosing hepatocellular carcinoma in the patient.

18 59. (new) A method of diagnosing metastatic liver cancer in a human patient, comprising:

(a) detecting the level of expression in a liver tissue sample of two or more mRNA species from Table 4A, 4B, 5, 6A, 6B, 9A or 9B; and

(b) comparing the detected level of expression to the level of expression of said two or more mRNA species in a metastatic liver cancer tissue sample, thereby diagnosing metastatic liver cancer in the patient.

19 60. (new) A method of claim 58, wherein the level of expression of said 2 or more mRNA species in a hepatocellular carcinoma liver sample is in Table 3A, 3B, 5, 7A, 7B, 8A or 8B.

20 61. (new) A method of claim 59, wherein the level of expression of said 2 or more mRNA species in a metastatic liver cancer sample is in Table 4A, 4B, 5, 6A, 6B, 9A or 9B.

REMARKS